

Claims

1. An air-suspension device for a vehicle, containing air-suspension bellows (3) and an electronically controlled level-regulating device (1), which, via an electrically actuatable valve device (6, 7, 32, 33, 44, 45), brings about admission of air to or venting of the air-suspension bellows (3) as needed, characterized in that there is provided at least one manual actuating element (18, 19, 65), by manual actuation of which admission of air to and/or venting of the air-suspension bellows (3) is possible even in the absence of power supply to the electronically controlled level-regulating device (1).
2. An air-suspension device according to claim 1, characterized in that a valve device (10, 11), which can be manually actuated via the manual actuating element (18, 19), is provided in a compressed-air branch (12, 14, 16) that is parallel to the electrically actuatable valve device (6, 7, 32, 33, 44, 45) and bypasses the electrically actuatable valve device (6, 7, 32, 33, 44, 45).
3. An air-suspension device according to claim 1, characterized in that the electrically actuatable valve device (6, 7, 32, 33, 44, 45) is coupled mechanically with the manual actuating element (18, 19), and is capable of being manually actuated via the manual actuating element (18, 19).

4. An air-suspension device according to claim 1, characterized in that a servo-valve device (30, 31, 40) is provided for admission of air to and/or venting of the air-suspension bellows (3), which servo-valve device (30, 31, 40) can be actuated at least by the electrically actuatable valves (6, 7, 32, 33, 44, 45) and by manual actuation of the manual actuating element (18, 19).
5. An air-suspension device according to claim 4, characterized in that the servo-valve device (30, 31, 40) is mechanically coupled with the manual actuating element (18, 19) and can be manually actuated via the manual actuating element (18, 19).
6. An air-suspension device according to at least one of the preceding claims, characterized in that the manual actuating element (65) is provided for actuation of a three-position valve (60), especially a rotary slide valve.
7. An air-suspension device according to at least one of the preceding claims, characterized in that the electronically controlled level-regulating device (1) is suitable for receiving at least one input variable, to be predefined manually, which input variable can be predefined via the manual actuating element (18, 19, 65) even in the presence of power supply to the electronically controlled level-regulating device (1).

8. An air-suspension device according to claim 7, characterized in that the electronically controlled level-regulating device (1) is suitable for receiving at least one distance signal from a displacement sensor (22) and at least one pressure signal from a pressure sensor (23), in which case the electronically controlled level-regulating device (1) detects on the basis of the distance signal and of the pressure signal whether an input variable has been manually predefined.
9. An air-suspension device according to at least one of the preceding claims, characterized in that the manual actuating element (18, 19) is designed as a momentary-contact switch.
10. An air-suspension device according to at least one of the preceding claims, characterized in that a further manual actuating element is provided, one (18) of the manual actuating elements being provided for actuation of air admission to the air-suspension bellows (3) and the other (19) manual actuating element being provided for actuation of venting of the air-suspension bellows (3).
11. An air-suspension device according to at least one of claims 1 to 8, characterized in that the manual actuating element (65) is designed as a rotary arm.
12. An air-suspension device according to at least one of the preceding claims, characterized in that the manual actuating element (18, 19, 65) is coupled mechanically with a directional control valve (6, 7, 10, 11, 34, 35, 46, 47, 60).

13. An air-suspension device according to at least one of the preceding claims, characterized in that the manual actuating element (18, 19, 65) is coupled mechanically with at least one electric signal transmitter (50, 51), and an electric signal can be transmitted by the signal transmitted (50, 51) upon manual actuation of the actuating element (18, 19, 65).
14. An air-suspension device according to claim 13, characterized in that the electric signal transmitter (50, 51) transmits an electric signal upon relatively light manual actuation of the actuating element (18, 19, 65) and the manually actuatable part of the valve device (6, 7, 10, 11, 34, 35, 46, 47, 60) is actuated upon relatively heavy manual actuation of the actuating element (18, 19, 65).
15. An air-suspension device according to at least one of the preceding claims, characterized in that the manual actuating element (18, 19) is disposed in the same housing as the electrically actuatable valve device (6, 7, 32, 33, 44, 45).